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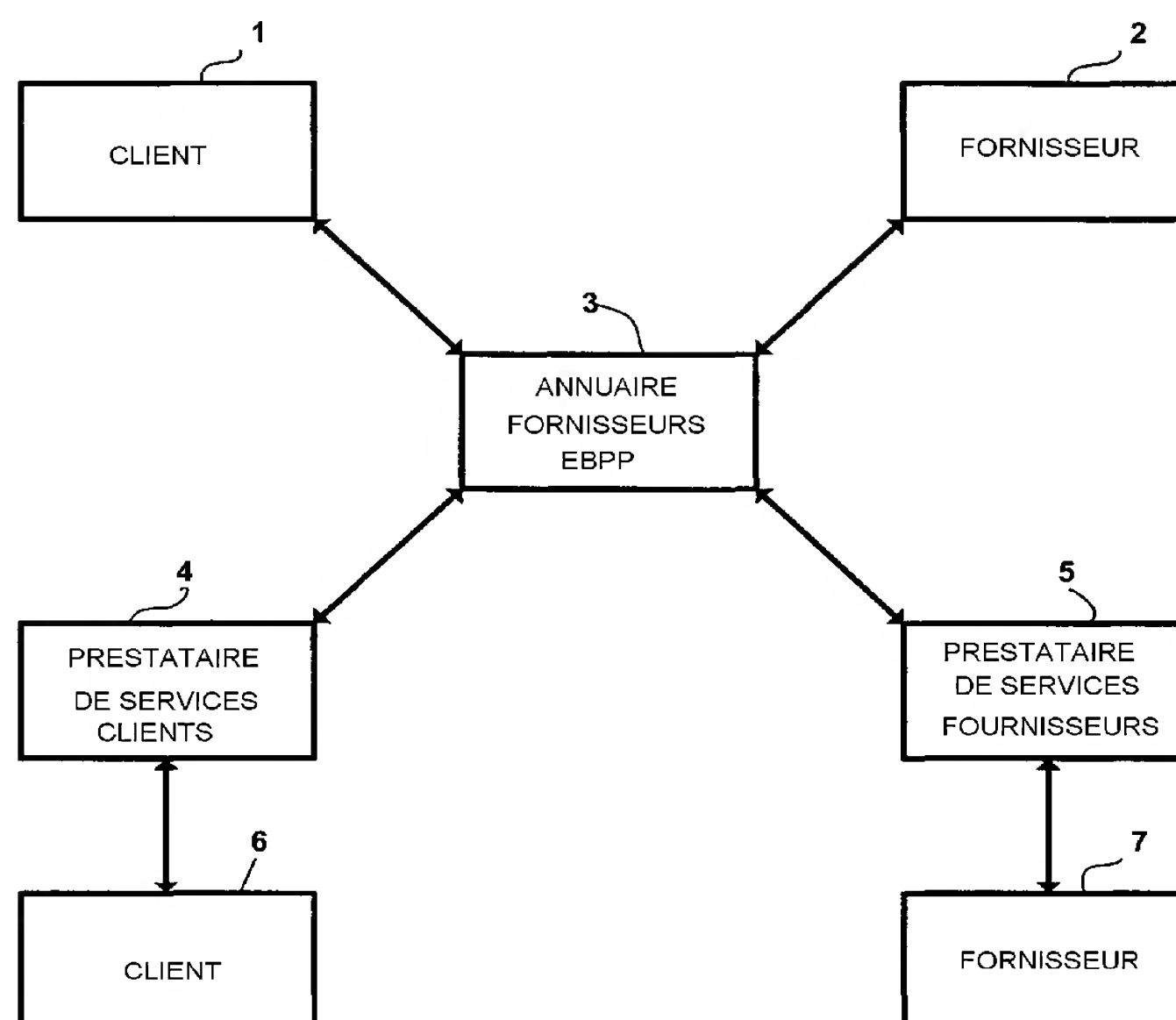
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- (71) Applicant (for all designated States except US): **BILL-WHIZ INC.** [CA/CA]; 6 Lansing Square, Suite 211, Toronto, Ontario M2J 1T5 (CA).
- (72) Inventor; and  
(75) Inventor/Applicant (for US only): **DEGROOT, John** [CA/CA]; 8 Millmere Drive, Toronto, Ontario M1G 2B1 (CA).
- (74) Agent: **DEETH WILLIAMS WALL LLP**; National Bank Building, Suite 400, 150 York Street, Toronto, Ontario M5H 3S5 (CA).
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(54) Title: ELECTRONIC BILL PRESENTMENT AND PAYMENT SYSTEM AND METHOD PROVIDING BILLER DIRECTORIES



(57) Abstract: An Electronic Bill Presentment and Payment (EBPP) biller directory system and method is provided. The method allows a centralized EBPP biller directory authority to compile an online directory of EBPP billers for reference by EBPP participants. The directory is accessible to EBPP participants over a distributed network.



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## ELECTRONIC BILL PRESENTMENT AND PAYMENT SYSTEM AND METHOD PROVIDING BILLER DIRECTORIES

**FIELD OF THE INVENTION**

The present invention relates to online directory systems, and more particularly to systems providing online directories for electronic bill presentment and payment

5 (EBPP) participants.

**BACKGROUND OF THE INVENTION**

Electronic bill presentment and payment (EBPP) refers to a set of electronic processes by which companies electronically present bills to customers for goods purchased or services rendered and by which customers make payments. EBPP

10 provides an alternative to traditional methods of presenting bills to customers through the postal system or courier services, and traditional methods of paying bills through paper cheques or bank-directed payments.

Although early forms of EBPP were implemented at large enterprise levels using private EDI systems, it is only since the recent expansion of the Internet that EBPP

15 has become a cost-effective solution for smaller-scale billers and individual and small-scale payers.

The number of U.S. households paying bills online is expected to increase from 1.8 million in 1999 to 18 million in 2003, according to some market researchers (see, for example, Sharon Nash, "Does Online Billing Add Up?" *PC Magazine*, January 24,

20 2000.). A plethora of EBPP providers have already entered the market (see Alan Joch, "E-bills Beat a Path to Your E-mail" *PC Week Online*, September 26, 1999.).

The presentment aspect of EBPP increasingly involves intermediary providers. On the biller side, the biller may employ a bill staging service, such as a bill publisher or

consolidator. On the customer side, the customer may employ his/her own private consolidator or an online bill payment service (The various types of EBPP service providers are described in detail in NACHA, Council for Electronic Billing and Payment, "An Overview of Electronic Bill Presentment and Payment Operating Models", April 9, 1999).

Ideally, each of these links in the chain are connected by contract and therefore rely on existing relationships of trust and familiarity. However, this creates a cumbersome situation for the biller, who must negotiate contracts with each potential EBPP service provider. The customer also encounters a difficulty – having to deal only with those EBPP service providers who have negotiated with the customer's billers. In the existing system, a customer is typically required to deal with a mosaic of service providers in order to pay all of his or her bills online.

It is difficult or impossible for service providers to have contracts with *all* potential billers. In order to provide a complete, one-stop EBPP service to customers, therefore, some alternative method of delivering EBPP service outside of contract is needed. Dealing with billers outside of contract, however, gives rise to a need for biller information.

The Council for Electronic Billing and Payment of the National Automated Clearing House Association has included as one of its draft recommended EBPP business principles that EBPP participants "must provide customers and each other with contact information." ("Electronic Bill Presentment and Payment (EBPP) Business Practices", edition 2.0, December 7, 1999 (Draft for Comment)).

There is a need for EBPP biller information that is accurate, authenticated, current and complete. The source of information should not be restricted by the presence or

absence of contractual arrangements with billers. The source should be independent.

Directory systems are known in the art. For instance, U.S. Pat. No. 6,014,629 to DeBruin-Ashton discloses a system for making directories of regional health care  
5 providers.

Online directory systems are also known in the art. Both U.S. Pat. No. 5,483,586 to Sussman and U.S. Pat. No. 5,960,442 to Pickering disclose general purpose online directory systems.

#### **SUMMARY OF THE INVENTION**

10 The present invention provides an online directory service meant specifically for the EBPP market, an independently-maintained EBPP biller directory system available to EBPP participants. Such a biller directory system has become commercially necessary as EBPP grows to encompass loosely connected participants.

An independent EBPP biller directory system would contribute to greater levels of  
15 customer convenience and satisfaction as the system would enable each customer to deal with the EBPP service provider of his/her choice and to pay any bill through one service provider.

Basic search and retrieval access to such an EBPP biller directory system is preferably provided freely and openly to any EBPP participant. However, it is a  
20 logical extension of the directory system to provide value-added services on a for-fee or subscription basis. Possible value-added services include printed global or customized EBPP biller directories, retrieval with customized data formatting,

proxying of directory information requests, and access control for specific directory listings.

According to an aspect of the present invention, a method of providing an online

- 5 EBPP biller information directory is disclosed. The method comprises three steps:
- by an EBPP biller, submitting EBPP biller information for publication with an EBPP biller directory authority;
  - entering EBPP biller information into an EBPP biller directory database; and
  - responsively to calls from client computer systems, providing online access to
- 10 EBPP biller information.

For ease of reference, "EBPP" refers to electronic bill presentment and payment. An "EBPP biller" refers to a company or organization which either provides directly, or indirectly through a service provider, electronic bills to a customer for goods

15 purchased or services rendered. An "EBPP biller directory authority" is preferably a company or organization that maintains an EBPP biller directory.

According to another aspect of the present invention, a method of providing an online EBPP biller information directory is disclosed. The method comprises four steps:

- 20 by an EBPP biller, submitting EBPP biller information for publication with an EBPP biller directory authority;
- by an EBPP biller directory administrator, authenticating the EBPP biller information;
  - entering authenticated EBPP biller information into an EBPP biller directory
- 25 database; and

responsively to calls from client computer systems, providing online access to authenticated EBPP biller information.

Authentication is preferably accomplished by human administrators verifying the accuracy of data submitted with the billers themselves or with related biller service  
5 providers.

In an embodiment of the method, the third step further comprises data mapping the submitted EBPP biller information into a standardized EBPP biller directory database format.

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Since the invention preferably allows EBPP biller information to be submitted in a variety of data formats, such as XML, OFX, and proprietary data formats, the individual data records must then be translated field-by-field into a standardized EBPP biller directory database format, such as relational database format. This  
15 translation can be done through existing software database solutions, such as vendor-supplied data import utilities or customized translation algorithms.

According to another aspect of the present invention, an EBPP biller directory system is disclosed. The system provides an online directory of EBPP biller information for  
20 EBPP participants. The system comprises a client-server network with a plurality of client computer systems, and a server connected to the client computer systems. The client computer systems submit and retrieve EBPP biller information. The server receives, stores and transmits EBPP biller information responsively to the client computer systems.

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The client-server architecture preferably comprises commonly-known hardware components. Each client computer system preferably comprises a computer, display monitor and at least two means of input, such as a standard keyboard and mouse. The server can be a standard PC running a server OS, such as Windows NT or  
5 UNIX, or it can be a mini-computer, such as a Sun server, or it can be a mainframe such as an IBM S/390. The server comprises at least one database for storage of the EBPP biller information. The server is preferably programmed with an external interface application that functions as a gateway allowing remote searchable access to the database. The external interface can be accessed by a user interface  
10 application for the purpose of displaying the directory information, or by an application such as a bill presentment application that uses the directory information as a component for a secondary service. A person skilled in the art would recognize that the computer server could equally be implemented as a network of interconnected computer servers, structured to provide parallel processing and/or  
15 fail-over functionality.

In an embodiment of the system, the server is connected to the client computer systems over a distributed network.

20 The client computer systems are communicably connected to the server, preferably by means of bi-directional Internet connection over standard telephone, ADSL, or ISDN lines.

According to another aspect of the present invention, an EBPP biller directory  
25 database is disclosed. The database comprises EBPP biller information for EBPP participants.



In an embodiment of the database, the EBPP biller information is stored in a standardized EBPP biller directory database format.

- 5 The database is preferably in a standard database format, using a standard query language such as SQL or using an object-oriented language such as Java.

According to another aspect of the present invention, an EBPP biller directory server is disclosed. The server comprises an external interface and a database. The EBPP  
10 biller directory user interface retrieves and submits EBPP biller information from remote users. The EBPP biller directory database is responsive to the EBPP biller directory external interface. The EBPP biller directory database stores EBPP biller directory information for retrieval through the EBPP biller directory external interface.

15 **BRIEF DESCRIPTION OF THE DRAWINGS**

Preferred embodiments of the invention will be described in relation to the drawings in which

FIG. 1 is a block diagram of an embodiment of the present invention.

FIG. 2 is a network diagram of an embodiment of the present invention.

20 **DETAILED DESCRIPTION OF THE DRAWINGS**

FIG. 1 shows two possible applications of the present invention, an EBPP biller information directory 3. In its simplest form, the directory provides biller information related to an EBPP biller 2 for access by an EBPP customer 1. The biller 2 would

submit information to a directory authority (not shown) for addition to the EBPP biller information directory **3**, which can then be searchably accessed by the customer **1**.

Preferably, the biller information includes the biller's exact name, address, and other contact information, such as telephone number, facsimile number, and the name of a  
5 designated contact person. The biller information may also include name and contact information of the biller's electronic bill publisher.

Fig. 1 also shows an alternative application of the invention, wherein the EBPP biller information directory **3** is available for use by intermediary EBPP participants, such as a customer service provider **4** and a biller service provider **5**. The customer  
10 service provider **4** acts as an agent of the customer **6**. These service providers enroll customers, enable presentment and provide customer care. The biller service provider **5** acts as an agent of the biller **7**. These service providers typically provide electronic staging of bills for presentment on behalf of a biller.

The directory **3** provides biller information necessary to allow the customer service  
15 provider **4** to present bills to the customer **6** without a pre-existing contractual relationship with the biller **7** or the biller service provider **5**.

Such biller information is provided to the directory authority (not shown) by the biller  
7. The biller authority may then authenticate the data through the biller service provider **5**.

20 The directory can be searchably accessed by all EBPP participants **1, 2, 4, 5, 6, 7**. Billers **2, 7** and their service providers **5** can preferably update the biller information as often as necessary by contacting the EBPP biller directory authority (not shown).

FIG. 2 shows the network configuration of an embodiment of the present invention. The foundation of the directory system is the EBPP biller directory database **13** which resides on a computer server **12** programmed with an external interface application **11**. The external interface application **11** functions as a gateway allowing remote  
5 searchable access to the database **13**.

The server **12** is communicably coupled over a network **10** to a plurality of client computer systems used by EBPP participants **1, 2, 4, 5, 6, 7**. The client-server network **10** is preferably a distributed network, such as the Internet.

The client systems programmably communicate with the external interface in two  
10 ways: by a stand-alone user interface application **8**, or by a business application **9**, such as a bill presentment application, using the directory information as a component for a secondary service.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled  
15 in the art, it is not desired to limit the invention to the exact construction and applications shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention and the appended claims and their equivalents.

All publications, patents and patent applications are incorporated by reference in their  
20 entirety to the same extent as if each individual publication, patent or patent application was specifically and individually indicated to be incorporated by reference in its entirety.

I claim:

1. A method of providing an online electronic bill presentment and payment (EBPP) biller information directory, comprising:
  - a) submitting EBPP biller information to an EBPP biller directory authority;
  - b) entering EBPP biller information into an EBPP biller directory database; and
  - c) providing client computer systems with online access to EBPP biller information.
2. A method of providing an online EBPP biller information directory, comprising:
  - a) submitting EBPP biller information to an EBPP biller directory authority;
  - b) authenticating the EBPP biller information;
  - c) entering authenticated EBPP biller information into an EBPP biller directory database; and
  - d) providing client computer systems with online access to authenticated EBPP biller information.
3. The method according to claim 2, wherein step (c) further comprises data mapping the submitted EBPP biller information into a standardized EBPP biller directory database format.
4. An EBPP biller directory system, comprising:
  - a) a plurality of client computer systems for submitting and retrieving EBPP biller information; and

- b) a server connected to the client computer systems for receiving, storing and transmitting EBPP biller information responsively to the client computer systems;

wherein the system provides an online directory of EBPP biller information.

5

- 5. The system according to claim 4, wherein the server is connected to the client computer systems over a distributed network.

10

- 6. An EBPP biller directory database, comprising EBPP biller information for EBPP participants.

- 7. The database according to claim 6, wherein the EBPP biller information is stored in a standardized EBPP biller directory database format.

15

- 8. An EBPP biller directory server, comprising:
  - a) an EBPP biller directory external interface for retrieving and submitting EBPP biller information by remote users; and
  - b) an EBPP biller directory database, responsive to the EBPP biller directory external interface, for storing EBPP biller directory information for retrieval through the EBPP biller directory external interface.

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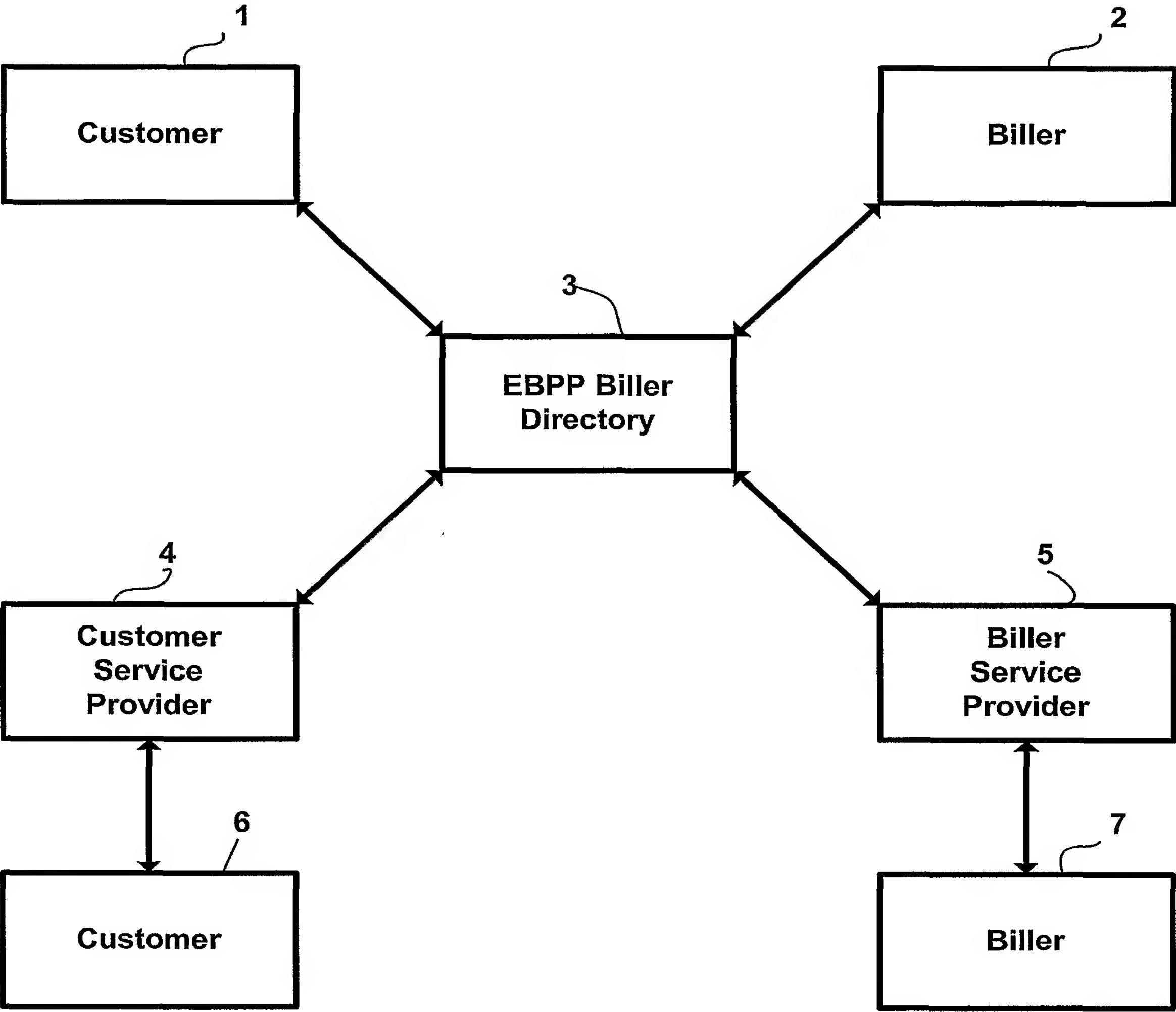


FIG. 1

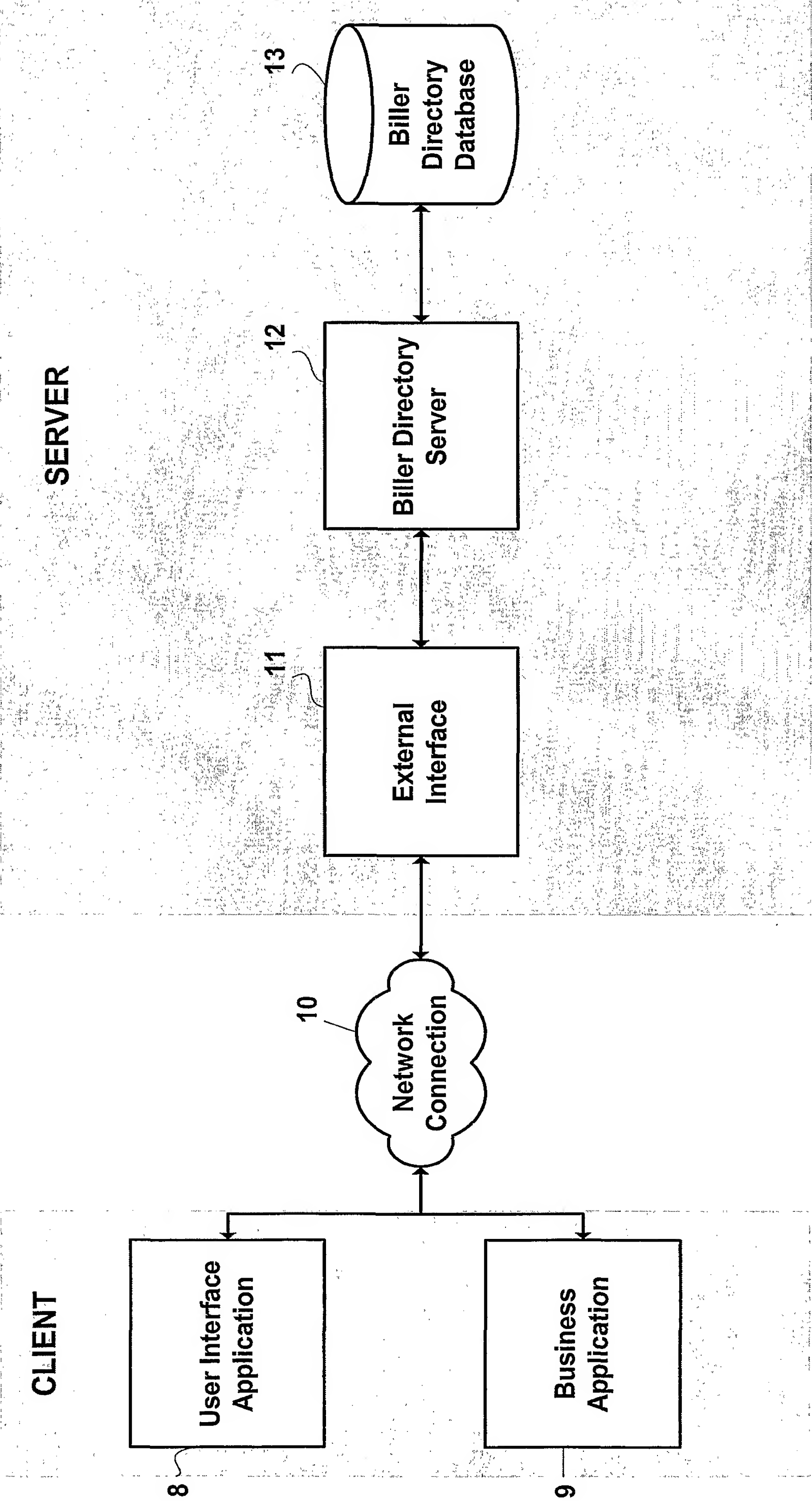


FIG. 2

## INTERNATIONAL SEARCH REPORT

International	Publication No
PCT/CA 00/01048	

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F G07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 745 947 A (IBM) 4 December 1996 (1996-12-04) column 3, line 5 - line 35 column 5, line 4 - line 14 ----	1-8
X	WO 98 15925 A (HAYWARD JAMES T ;ROUGHGARDEN JEFFREY D (US); KOLLING RAY (US); OCC) 16 April 1998 (1998-04-16) abstract page 4, line 31 -page 7, line 30 page 9, line 9 -page 30, line 5 ----- -/--	1-8

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## ° Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
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- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

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European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Glaser, N



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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>COUNCIL FOR ELECTRONIC BILLING AND PAYMENT OF THE NATIONAL AUTOMATED CLEARING HOUSE ASSOCIATION (NACHA): "Electronic Bill Payment/Presentment Business Practices" NACHA, 'Online! vol. 2.0, 7 December 1999 (1999-12-07), XP002170180 Retrieved from the Internet: &lt;URL:http://cebp.nacha.org/downloads/form/bp2/busparcv2.pdf&gt; 'retrieved on 2001-06-20! cited in the application page 19 -page 23</p> <p>---</p>	1-8
X	<p>BUSINESS TASK FORCE OF NACHA'S COUNCIL FOR ELECTRONIC BILLING AND PAYMENT: "An Overview of Electronic Bill Presentment and Payment Operating Models" NACHA, 'Online! 9 April 1999 (1999-04-09), pages 1-12, XP002170181 Retrieved from the Internet: &lt;URL:http://cebp.nacha.org/downloads/49models2.pdf&gt; 'retrieved on 2001-06-20! cited in the application page 2 -page 5</p> <p>---</p>	1-8
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Information on patent family members

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